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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/724,831	12/02/2003	Hirofumi Kuwabara	246072US3	2728
22850	7590	08/03/2005	EXAMINER	
OBLON, SPIVAK, MCCLELLAND, MAIER & NEUSTADT, P.C. 1940 DUKE STREET ALEXANDRIA, VA 22314			TAMAI, KARL I	
			ART UNIT	PAPER NUMBER
			2834	

DATE MAILED: 08/03/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

## Office Action Summary

Application No.

10/724,831

Applicant(s)

KUWABARA ET AL.

Examiner

Tamai IE Karl

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --  
Period for Reply

### A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

### Status

- 1) ☒ Responsive to communication(s) filed on 08 June 2005.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

### Disposition of Claims

- 4) ☒ Claim(s) 1-20 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-20 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

### Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some \* c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- \* See the attached detailed Office action for a list of the certified copies not received.

### Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)  
Paper No(s)/Mail Date \_\_\_\_\_
- 4) ☐ Interview Summary (PTO-413)  
Paper No(s)/Mail Date. \_\_\_\_\_
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: \_\_\_\_\_

**DETAILED ACTION**

***Specification***

1. The amended title "ADHESION STRUCTURE FOR MOTOR, HAVING THICKNESS DETERMINING MEANS", has been entered into the file wrapper. The requirement of a new title is withdrawn.

***Claim Rejections - 35 USC § 102***

2. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

3. The rejections of Claims 1-20 under Suzuki (JP 07322576)(alone or in combination with other references) are withdrawn.
4. Claims 1, 6, 8, 14, and 16-20 are rejected under 35 U.S.C. 102(b) as being clearly anticipated by Mobius et al. (Mobius)(WO 00/149859). Mobius teaches a rotor with a plurality of magnets 20 secured to a core by axially extending ribs 50 between the magnet and the core to determine the thickness of the adhesive layer 30 to absorb the stress between the differences in thermal expansion/dilatation coefficients between the core and the magnets. Mobius teaches two spacers are integrally formed on the magnets, inherently forming a groove there between. Mobius teaches the adhesive layer is uniform at the height of the spacer 50. The drawings show more than 48% of the magnet surface facing the rotor.

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5. Claims 1, 11, 14, 18, and 20 are rejected under 35 U.S.C. 102(b) as being clearly anticipated by Amamiya et al. (Amamiya)(JP 62-193540). Amamiya teaches a stator having a magnet 2 adhered to a core 1 (having different coefficients of thermal expansion) and absorb the shearing stress by the different coefficients of thermal expansion, where the magnet has a thickness determining means/member of a surface with a smaller radius of curvature than the frame. The adhesive shown to cover more than 48% of the rotor surface oppose to the frame.

***Claim Rejections - 35 USC § 103***

6. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

7. This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

8. Claims 2 and 3 are rejected under 35 U.S.C. 103(a) as being unpatentable over Mobius et al. (Mobius)(WO 00/149859) and Yamada et al. (Yamada)(US 5734216).

Mobius teaches every aspect of the invention except the spacers/adhesive layer is in the range of 0.05 mm to 0.2 mm. Yamada teaches the thickness of the gap is 0.2mm around 100% of the rotor. It would have been obvious to a person of ordinary skill in the art at the time of the invention to construct the motor of Mobius with the thickness of the spacers/adhesive layer is in the range of 0.05 mm to 0.2 mm to adhere the magnet to the core and to help prevent breakages as taught by Yamada.

9. Claims 4, 5, 9, 10, 12, and 13 are rejected under 35 U.S.C. 103(a) as being unpatentable over Mobius et al. (Mobius)(WO 00/149859) and Yamada et al. (Yamada)(US 5734216). Mobius and Yamada teach every aspect of the invention except the thickness range being 0.075-0.175 or 0.1-0.15 mm, or the difference in the coefficient of thermal expansion being greater than  $10.4 \times 10^{-6}$ , or the magnet being rare earth. Yamada teaches the thickness of the adhesive layer and the difference in the coefficient of thermal expansion are result effective variables to prevent breakage of the rare earth magnet. It would have been obvious to a person of ordinary skill in the art at the time of the invention to construct the motor of Mobius with the thickness of the determining means being 0.075-0.175 or 0.1-0.15 mm or the difference in the coefficient of thermal expansion being greater than  $10.4 \times 10^{-6}$  to prevent breakage of the magnet at high temperatures, and because Mobius teaches the thickness of the adhesive layer should be minimized, and with a rare earth magnet because Mobius teaches that NdFeB magnets are a preferred material in motors.

10. Claims 7 and 11 are rejected under 35 U.S.C. 103(a) as being unpatentable over Mobius et al. (Mobius)(WO 00/149859) and Mobius (Mobius '809)(US 5939809).

Mobius teaches every aspect of the invention except the rib extending over the entire length of the rotor and the magnets having a radius of curvature smaller than the rotor or stator. Mobius teaches the spacer 30 formed by a radius of curvature smaller than the rotor which are continuous over the axial length of the rotor. It would have been obvious to a person of ordinary skill in the art at the time of the invention to construct the motor of Mobius with the spacers being continuous over the length of the rotor to position, as taught by Mobius '809, to support the magnets in the rotor in a balanced condition under thermal changes.

11. Claims 7 and 15 are rejected under 35 U.S.C. 103(a) as being unpatentable over Mobius et al. (Mobius)(WO 00/149859) and Burton (US 20020134252). Mobius teaches every aspect of the invention except the rib extending over the entire length of the rotor and the surface coverage being between 48-65%. Burton teaches the ribs 40, 42 space the magnet from the core and can take a variety of widths to support the magnets. It would have been obvious to a person of ordinary skill in the art at the time of the invention to construct the motor of Mobius with the 48-65 % of the magnet opposed to the rotor being adhered by the adhesive layer.

***Response to Arguments***

12. Applicant's arguments with respect to claims 1-20 have been considered but are moot in view of the new grounds of rejection.

***Conclusion***

13. Applicant's amendment necessitated the new grounds of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire **THREE MONTHS** from the mailing date of this action. In the event a first reply is filed within **TWO MONTHS** of the mailing date of this final action and the advisory action is not mailed until after the end of the **THREE-MONTH** shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than **SIX MONTHS** from the date of this final action.


14. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Karl I.E. Tamai whose telephone number is (571) 272 - 2036.

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The examiner can be normally contacted on Monday through Friday from 8:00 am to 4:00 pm. If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Mr. Darren Schuberg, can be reached at (571) 272 - 2044. The facsimile number for the Group is (571) 273 - 8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Karl I Tamai  
PRIMARY PATENT EXAMINER  
August 2, 2005



KARL TAMAI  
PRIMARY EXAMINER